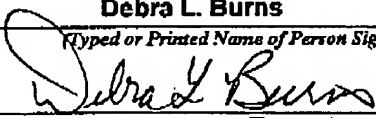


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JUN 21 2007 16:00 FR CENTRAL FAX CENTER 734 302 7622 TO 915712738300 P.01/12

JUN 21 2007

CERTIFICATE OF TRANSMISSION BY FACSIMILE (37 CFR 1.8) Applicant(s): Dongliang LIN et al.			Docket No. 133697-0026	
Application No. 10/580,664	Filing Date 05/28/2006	Examiner Unknown	Group Art Unit 1742	
Invention: HIGH-SILICON STEEL AND METHOD OF MAKING THE SAME				
<p>Certificate of Transmission (1 pg), Transmittal Letter (1 pg), Submission of English Translation of Written Opinion of the International Searching Authority (1 pg), copy of translation of Written Opinion in conjunction with PCT/CN2004/001317</p> <p>I hereby certify that this _____ (Identify type of correspondence)</p> <p>is being facsimile transmitted to the United States Patent and Trademark Office (Fax. No. 571-273-8300)</p> <p>on <u>June 21, 2007</u> (Date)</p> <p style="text-align: center;">Debra L. Burns (Typed or Printed Name of Person Signing Certificate)</p> <p style="text-align: center;"> (Signature)</p> <p style="text-align: center;">Note: Each paper must have its own certificate of mailing.</p>				

P16/REV02

JUN 21 2007

PTO/SB/21 (04-07)

Approved for use through 09/30/2007. OMB 0851-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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**TRANSMITTAL
FORM**

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number 10/580,664

Filing Date May 26, 2006

First Named Inventor Dongliang LIN et al.

Art Unit 1742

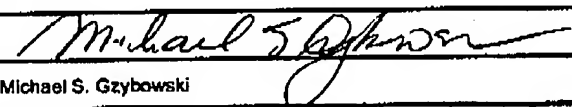
Examiner Name Unknown

Attorney Docket Number 133697-0026

ENCLOSURES (Check all that apply)

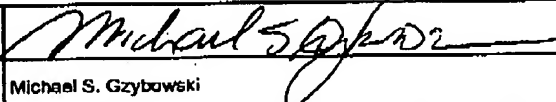
<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance Communication to TC
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Change of Correspondence Address	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Terminal Disclaimer	English Translation of the Written Opinion of the International Searching Authority
<input type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Request for Refund	
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Reply to Missing Parts/Incomplete Application	<input type="checkbox"/> Landscape Table on CD	
<input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53		
Remarks		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	BUTZEL LONG		
Signature			
Printed name	Michael S. Gzybowski		
Date	June 21, 2007	Reg. No.	32,816

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name	Michael S. Gzybowski	Date	June 21, 2007


This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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JUN 21 2007

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

<i>Group</i>		}	<u>Certificate Under 37 CFR 1.8(b)</u>
<i>Art Unit:</i>	Unknown	}	
<i>Attorney</i>		}	I hereby certify that this correspondence is
<i>Docket No.:</i>	133697-0026	}	being transmitted to the United States Patent
		}	and Trademark Office via facsimile on the
		}	date indicated below.
<i>Applicant:</i>	Dongliang LIN et al.	}	
		}	
<i>Invention:</i>	HIGH-SILICON STEEL AND METHOD OF	}	on <u>June 21, 2007</u>
	MAKING THE SAME	}	
		}	
<i>Serial No:</i>	10/580,664	}	
<i>Filing Date:</i>	May 26, 2006	}	Michael S. Gzybowski
<i>Examiner:</i>	Unknown	}	


Submission of English Translation of Written Opinion of the International Searching Authority

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith is the English Translation of the Written Opinion of the International
Searching Authority issued in conjunction with PCT/CN2004/001317.

Respectfully submitted,


Michael S. Gzybowski
Reg. No. 32,816

BUTZEL LONG
350 South Main Street
Suite 300
Ann Arbor, Michigan 48104
(734) 995-3110

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

LUNGTIN SINKO IP ATTORNEYS, LTD.
Suite 1401-1402, Shenergy International Building,
No. 1 Fuxing Middle Road,
Shanghai 200021, China
LOU Xianying

REC'D 09 MAR 2005

PCT/ WIPO POT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43 bis.1)

Date of mailing

(day/month/year) 2005 (1) 03 - 2005

Applicant's or agent's file reference

SK 0411080-P

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/CN2004/001317

International filing date (day/month/year)

19.NOV.2004 (19.11.2004)

Priority date (day/month/year)

27.NOV.2003 (27.11.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC' C22C38/02 C21D1/00

Applicant

LIN Dongliang et al.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/
6 Xitucheng Rd. Jimen Bridge, Haidian District, Beijing
100088, China

Facsimile No. (86-10)62019451

Authorized officer

PANG Limin

Telephone No. (86-10)62084726

Form PCT/ISA/237(cover sheet)(January 2004)

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**International application No.
PCT/CN2004/001317**Box No. 1 Basis of the opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language, which is the language of a translation furnished for the purposes of: international search (under Rules 12.3 and 23.1(b))
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ in addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Form PCT/ISA/237(Box No. I) (January 2004)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITYInternational application No.
PCT/CN2004/001317Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

1. Statement:

Novelty (N)	Claims 2-7	YES
	Claims 1	NO
Inventive step (IS)	Claims 2-7	YES
	Claims 1	NO
Industrial applicability (IA)	Claims 1-7	YES
	Claims	NO

2. Citations and explanations

D1(CN1400319 A see claim1),D2 (US5902419 A see claim1) ,D3 (JP2001254155A see claim 3) ,D4 (JP2000192204A see claim 1) 和 D5 (CN1089663 A see claim 2) disclose a high silicon steel comprising the same main components as the present claim 1. Moreover the composition ranges of these prior art documents and that of the present claim 1 overlap.

Each of the above D1,D2,D3,D4 and D5 discloses the subject matter of the present claim 1. Thus, claim 1 don't comply with the requirement of the novelty of Art.33(2)PCT.

The subject matters of claims 2-7 have not been found in the prior art, they couldn't be obtained simply by their combination, and they are not obvious to the skilled in the art. Therefore, in view of the documents cited in the Search Report, the subject matters of claims 2-7 appear to have novelty and have inventive step corresponding to the Art.33 PCT.

Additionally, claims 1-7 could be applied in industry, they are industrially applicable corresponding to the Art.33 PCT.

PATENT COOPERATION TREATY

PCT/CN2004/0013

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

To:

LUNGTIN SINKO IP ATTORNEYS, LTD.
Suite 1401-1402
Shenergy International Building
No. 1, Fuxing Middle Road
Shanghai 200021
CHINE

Date of mailing (day/month/year) 01 June 2006 (01.06.2006)	
Applicant's or agent's file reference SK 0411080-P	IMPORTANT NOTIFICATION
International application No. PCT/CN2004/001317	International filing date (day/month/year) 19 November 2004 (19.11.2004)
Applicant LIN, Dongliang et al	

1. Transmittal of the translation to the applicant.



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

EP, KR

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 740 14 35	Authorized officer Nora Lindner Facsimile No. +41 22 338 89 65
---	--

Translation

PATENT COOPERATION TREATY

PCT

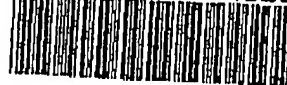
INTERNATIONAL PRELIMINARY REPORT ON PAT
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 09 JAN 2006

WIPO

PCT

PCT Application
PCT/CN2004/001317

Applicant's or agent's file reference 0411080-P		FOR FURTHER ACTION		Sec Form PCT/IPEA/416
International application No. PCT/CN2004/001317		International filing date (day/month/year) 19.NOV.2004 (19.11.2004)		Priority date (day/month/year) 27.NOV.2004 (27.11.2003)
International Patent Classification (IPC) or national classification and IPC IPC ⁷ : C22C38/02 C21D1/00				
Applicant LIN, Dongliang et al.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>2</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. 1 and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 26.Sept.2005 (26.09.2005)		Date of completion of this report 09.Dec.2005 (09.12.2005)		
Name and mailing address of the IPEA/CN The State Intellectual Property Office, the P.R.China, 6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China 100088		Authorized officer PANG, Limin		
Facsimile No. 86-10-62019451		Telephone No. (86-10) 62084726		

Form PCT/IPEA/409 (cover sheet) (April 2005)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/CN2004/001317

Box No. 1 Basis of the report

1. With regard to the language, this report is based on:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-7 as originally filed/furnished
- pages * _____ received by this Authority on _____
- pages * _____ received by this Authority on _____
- ☒ the claims:
- pages _____ as originally filed/furnished
- pages * _____ as amended (together with any statement) under Article 19
- pages * 8-9 received by this Authority on 26.Sept.2005 (26.09.2005)
- pages * _____ received by this Authority on _____
- ☒ the drawings:
- pages 1,2 as originally filed/furnished
- pages * _____ received by this Authority on _____
- pages * _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

Form PCT/PEA/409 (Box No. 1) (April 2005)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/CN2004/001317

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement:

Novelty (N)	Claims 1-6	YES
	Claims 7	NO
Inventive step (IS)	Claims 1-6	YES
	Claims 7	NO
Industrial applicability (IA)	Claims 1-7	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

None of the subject matters of claims 1—6 has been anticipated in the prior art. So claims 1—6 appear to be novel according to Art.33(2) PCT.

None of the subject matters of claims 1—6 could be obtained plainly or logically from the prior art, and they are not obvious to the skilled in the art. Therefore, in view of the documents cited in the Search Report, the subject matters of claims 1—6 appear to involve inventive step according to the Art.33(3) PCT.

D1(CN1400319 A see claim1),D2 (US5902419 A see claim1) ,D3 (JP2001254155A see claim 3) ,D4 (JP2000192204A see claim 1) and D5 (CN1089663 A see claim 2) disclose respectively a high silicon steel comprising the same components except impurities as those of the present claim 7. Moreover the composition ranges of these components in the prior art documents and those of the present claim 7 overlap. The subject matter of claim 7 is a high silicon steel made by the process in claim 1, however the manufacturing process in claim 1 would not impart distinctive characteristics on the final product of claim 7. The product is not rendered novel merely by the fact that it is produced by means of a new process.

Each of the above D1,D2,D3,D4 and D5 discloses the subject matter of the present claim 7. Thus, claim 7 don't comply with the requirement of the novelty of Art.33(2)PCT.

Claims 1-7 can be made or used according to their nature and are therefore industrially applicable according to Art.33(4) PCT.

PCT/CN 2004 / 0 0 1 3 1
26 · 9月 2005 (26 · 09 · 2005)

权 利 要 求

1、一种高硅钢的制备方法，其特征是，在 5%-10%含硅量的高硅钢中加入 0.01—1%碳，并对高硅钢的样品进行均匀化热处理，即从 1200℃
5 至低于钢熔点的固溶热处理，保温退火消除高硅钢中大部分第二相，均匀化退火在保护气氛中进行。

2、根据权利要求 1 所述的高硅钢的制备方法，其特征是，均匀化处理在保护气氛中进行，采用非氧化气氛，脱碳气氛或真空。

3、根据权利要求 1 所述的高硅钢的制备方法，其特征是，采用控制
10 热机械处理工艺来调控碳含量。

4、根据权利要求 1 所述的高硅钢的制备方法，其特征是，通过常规金属加工方法制备各种厚度的含碳高硅钢片，其厚度分别达到 0.5mm，0.35mm，0.1mm，硅钢片的显微组织为均匀的晶粒尺寸，其大小达到硅钢片的厚度，即分别达到 0.5mm、0.35mm 和 0.1mm。

5、根据权利要求 4 所述的高硅钢的制备方法，其特征是，所述的常规金属加工方法包括以下中的至少一种：(1) 连铸连轧，连轧温度范围为 1000℃—600℃之间，铸锭在 1000℃—600℃之间连轧，(2) 结合热轧和冷轧，温度范围为室温到 500℃，生产薄硅钢片，(3) 结合单片热轧、双片叠轧和多片叠轧生产薄硅钢片。
15

6、根据权利要求 1 所述的高硅钢的制备方法，其特征是，制备的硅钢，其室温拉伸伸长率至少达到 10%，从 200℃到 800℃的拉伸伸长率大于 20%，在 800℃及高于 800℃的伸长率大于 100%，从室温到 500℃的强度为 600MPa，其在 500℃空气中暴露 50 小时后的氧化速率为 0.01g/m²，具有以下的软磁性能：最大导磁率为：46000 μm，在各种频率下的铁损
20 为：W_{10/50} = 0.49 w/kg，W_{10/400} = 10.56w/kg，W_{5/1K} = 11w/kg，W_{1/5K} =

8
34 条修改
修 改 页 IPEA/CN

PCT/CN 2004 / 0 0 1 3 1 7

2 6 · 9 月 2005 (2 6 · 0 9 · 2 0 0 5)

8.71w/kg, $W_{0.5/10}=6.5w/kg$ 。

7、一种通过权利要求 1 所述方法制备而得的高硅钢，含有硅、铁，其特征在于，重量百分比为：5—10%硅，0.007-1%碳，杂质 Mn 和/或 P 和/或 S 和/或 Cr 和/或 Ni 含量小于 0.01%，其余为铁。

9

34 条修改

修改页 IPEA/CN